

A very useful bibliographic list of the more important books and papers having reference to each system of formations is appended to the successive chapters on the great periods; and a generalized section is given for each of the great series in England or elsewhere.

The concluding chapter, on "the Succession of Life upon the Globe," is well worthy of attention. The general appearance of *succession* and *progression* among living things of all recognizable time—the apparent exceptions to these phenomena—the gradual introduction and extinction of faunæ and floræ in most instances—the apparently almost sudden incoming and disappearance of such groups as the Graptolites and Trilobites—and the apparently sudden appearance of Hippuritidæ, of the Dicotyledonous flora, and, indeed, of the Cambrian fauna, are treated of in a clear-sighted philosophic spirit, glad to gather all that is known, and waiting and working for further light.

A tabular view of the chief divisions of the animal kingdom is given in the Appendix. A careful Glossary and full Index complete this well-arranged and well-printed book, which we cordially recommend to geologists and other naturalists.

MISCELLANEOUS.

Zoology of the 'Challenger' Expedition.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,—Since I wrote you on the subject of the distribution of the 'Challenger' collections for description and study, a distinguished naturalist has moved in the House of Commons for the instructions given by the Treasury to Sir C. Wyville Thomson. The Treasury (courting, as I know they may well and safely do, the fullest inquiry) have ordered the whole correspondence to be printed; and it will be in hand shortly.

An important letter has already been communicated to a public department; and as I have seen it, I can now write on a matter in which my hands were formerly tied. The arrangements of the 'Challenger' expedition were superintended by a Circumnavigation Committee, which reported at last to the Council of the Royal Society; so that when the Treasury asked for the advice of that body, one of the secretaries was instructed to write, embodying the suggestions of the Committee. I need hardly say that this was carefully and faithfully done; and now the letter advising the Government can be seen, and I trust that I am not transgressing in stating that extraordinary care was taken in it to do what was best for science and

just to Sir C. Wyville Thomson. After carefully reading this letter, now public property, I have no hesitation in stating that, unless a meaning be placed upon the wording of one part of it which is utterly irreconcilable with another, the sole responsibility for his course of action rests with Sir Wyville Thomson.

In this letter the specimens collected by the 'Challenger' are divided into two groups—the occasional, which do not bear specially on the objects of the expedition, and those which are "the *pièces justificatives* of a large part of the results of the investigations of the 'Challenger.'" With regard to the disposal of the first set, it is stated, "They [the Council of the Royal Society] are, however, convinced that, both in the interests of science and in view of economy, no arrangement could be better than that proposed by Sir C. W. Thomson; according to which the work will be done by the highest authorities in their respective subjects in the country, while the naming of the specimens will involve no expense to the Government."

The second and more important collection is recommended to be dealt with as follows:—"They [the Council of the Royal Society] hope that their Lordships will see fit to leave the collection mentioned under 12 *e* in his (Sir W. C. T.'s) charge, to be worked out under his direction."

On turning to paragraph "12 *e*" I find the following:—"That the whole of the remainder of the collection, including marine invertebrate animals, samples of the bottom, samples of water for physical and chemical examination, remain under my charge as heretofore; my chief assistant, Mr. Murray, keeping a check-list of the whereabouts of all the specimens placed temporarily for any purpose out of my custody, so that, in case of my lapsing, he may be familiar with the whole arrangement. That a complete type-series of all species be selected by me as soon as they are determined and described and sent to the British Museum; the duplicates remaining in my hands to be afterwards distributed according to the instructions of their Lordships."

The letter, of which these quotations form a small part, was dated December 8, 1876. The Treasury then instructed Sir Wyville Thomson. They will insert a sum not exceeding £4000 in the estimates (1877-78) to provide for working out the collections included in paragraph 12 *e* (see *ante*).

It is not probable that the Treasury sanctioned Sir Wyville Thomson's course of conduct; and it is quite evident that no Government would subsidize foreign naturalists to do the work of competent British investigators. The conduct of the Government has been most liberal; and therefore, in supporting their patriotic wish to advance science, it is absolutely necessary to thoroughly open up the question of Sir Wyville Thomson's administration in its widest sense. I wish, therefore, to inform you regarding the disposal of the collections and the money.

The Sea Mammals have been, or are to be, offered to Prof. Turner; the Birds to Dr. Selater; the Fish to Dr. Günther; the Cephalopoda

to Prof. Huxley; the Gasteropoda and Lamellibranchs to the Rev. R. B. Watson; the Brachiopoda to Mr. Davidson; the Ostracoda Copepoda to Mr. G. S. Brady; the Rhizopoda to Mr. H. B. Brady; the Isopoda to Mr. H. Woodward; the Cirripedia to Mr. C. Darwin (?); the Annelida to Dr. McIntosh; the Gephyrea to Prof. Ray Lankester; the Bryozoa to Mr. Busk; the Hydromedusæ to Dr. Allman; the Corals to Mr. Moseley; the Crinoidea to Sir Wyville Thomson; the Echinoidea (probably, but I do not write certainly, the Asteroidea) to Mr. A. Agassiz; the Ophiuroidea to Mr. Lyman; the Spongida to Prof. O. Schmidt; the Radiolaria to Prof. E. Hæckel; the higher Crustacea to Prof. Claus; and the Alcyonaria to Prof. Kölliker, to whom they have long since been sent. Mr. Murray is a permanent assistant; Mr. Wild's excellent artistic services are retained; and Mr. Pearcey is also employed. Sir Wyville Thomson, I again assert, has sent or proposes to send, the most important of the collections abroad for description. The general and geological value of the groups sent to the two American and four German naturalists is infinitely greater than that of all the others.

In the above list one misses some familiar names, such as Carpenter, Gwyn Jeffreys, Norman, T. Wright, Carter, Rupert Jones, Spence Bate, Archer. Of course no one from the British Museum, except Mr. Woodward and Dr. Günther, is included; nor is there mention of any of the very rising young naturalists and palæontologists who are doing such admirable work at Cambridge. One would have thought that there was somebody at Glasgow or at St. Andrew's who was worthy of consideration.

The Director, *as he gives up much paying work*, will receive £500 for the year and £1 a day travelling expenses. Mr. Murray and Mr. Wild will receive £400 a year each. The discretion of the "Director is to be used in paying" those specialists who are working up the different departments. But, doubtless, as those of us who "worked up" the results of the deep-sea dredgings of the 'Porcupine' expedition did it gratuitously, no call for money will be made by any one now at work except for simple expenses. When the Government bring forward the motion of supply they will be informed that their liberality has been far in excess of the requirements of the case.

I forward you the vouchers for my statements.

Yours, &c.,

May 25, 1877.

P. MARTIN DUNCAN.

We append a remarkable paragraph which appeared in 'Nature' of the 17th ult. It is as follows:—

"We regret to see what we must characterize as an unwarranted attack made upon Sir Wyville Thomson in the current number of the 'Annals and Magazine of Natural History,' as to the disposal of the specimens obtained by the 'Challenger' expedition. Dr. Martin Duncan appears to have taken for granted that an extract of

a private letter, which some indiscreet friend of Mr. Alexander Agassiz published in 'Silliman's Journal,' and which then found its way into the English journals, is 'official.' He would have done well to have ascertained whether this was really the case before allowing himself to comment on Sir Wyville Thomson's proceedings in such severe terms. So far as we are aware, out of the many naturalists actually engaged to work out the results of the 'Challenger' expedition, only *three* are not Englishmen, two being Americans, and one German. These three gentlemen are of the very highest repute in their respective branches; and Sir Wyville Thomson has, in our opinion, done well for science to secure their services."

The Editor of 'Nature' seems to have a curious notion of the application of words. In what manner, except by an expression of his own opinion, does he attempt to show that the letter from Prof. Duncan, which appeared in our last number, contained an "unwarranted" attack? In what sense he uses the word "official" we are at a loss to understand. It is not usual in such cases to talk of "official" statements and communications. The only question seems to be whether the statements published in the 'American Journal' for February last were or were not "true;" and we were informed by Prof. Duncan that he had fully satisfied himself upon this point, by direct communication with Sir Wyville Thomson, before he wrote his letter. From the wording of the letter from Mr. Alexander Agassiz, as printed in the 'American Journal,' it is perfectly clear that the letter in question was addressed by Mr. Agassiz to the Editors of that Journal, or to one of them; and hence that gentleman himself must be held guilty of the indiscretion pointed out by the Editor of 'Nature.' But in what does the indiscreetness consist? Mr. Agassiz's statement was undoubtedly indiscreet if there was any thing in the transaction that required concealment. Are we to infer that such was the case? Indiscretions appear not to be peculiarly the produce of the western shore of the Atlantic.

On a Newt from the Darjiling Hills. By Prof. J. WOOD-MASON.

At the February Meeting of the Asiatic Society of Bengal, Prof. Wood-Mason exhibited a specimen of a newt which he had detected in a small collection of insects and other objects recently made by Colonel G. B. Mainwaring in the Darjiling hills and said:—"The specimen is in the highest degree interesting, not only as being the first example of a tailed amphibian that has ever been found in India, but also as being an individual of the remarkable species described by Dr. J. Anderson (P. Z. S. 1871, p. 423) from specimens obtained by him around the little Chinese town of Nantin and in various other parts of the same region. *Tylototriton verrucosus*, as the animal has been called by Dr. Anderson, lives, in Western China, in flooded rice-fields, but in Sikkim, according to Colonel Main-